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NATURAL PLANTINGS FOR ATTRACTING WATERFOWL
TO MARSH AND OTHER WATER AREAS

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Applicability of the Baiting Regulation

Waterfowl cannot be legally taken when attracted to fields, marshes, or other areas by corn, wheat, rye, oats, or other grains that were not and had not theretofore been planted there as an annual agricultural crop, but manifestly to attract the birds for shooting. The present regulations, as proclaimed by the President under the Migratory Bird Treaty Act, do not permit the taking of these game birds by aid, directly or indirectly, of grains or grain products, or by any other kind of food, when so put out that the birds are enticed thereby.

The Department does not construe the regulations, however, as applicable to natural wild vegetation already established on or in marsh or water areas or planted there when the normal growth is deficient, with a view to establishing a stand of natural wild-duck foods. Such plantings are desirable, as they grow throughout the year and provide game birds with natural foods. Waterfowl attracted by the wild plants here listed may be taken during the prescribed open seasons without violating the present Federal regulation on baiting.

To aid in the improvement of areas that are suitable for establishing permanent stands of marsh and aquatic vegetation attractive to ducks, the Biological Survey here lists the principal species of wild plants likely to produce the best results on three types of marsh or water areas, and presents a brief discussion of certain problems of each of these three areas, as follows: (1) Areas characterized by muddy, fluctuating water (as in the Mississippi Valley); (2) coastal marshes and marshland ponds; and (3) miscellaneous areas.

Areas Characterized by Muddy, Fluctuating Water

The flood plains of the Mississippi River, from central Iowa and Illinois southward, together with adjoining flood plains of larger tributaries, are the most important example of the type of area characterized by muddy water and fluctuating levels. Only in the older ox-bow lakes or other bodies somewhat removed from the main channel of the river do even the most adaptable species of aquatic plants have a chance to survive the combination of destructive water fluctuation, the scouring action of spring floods, extreme diminution of light by turbidity, and burial under blankets of silt.

The prospects of improving aquatic vegetation in situations of this kind are slight, but fortunately there are fair to excellent potentialities for developing good food resources on mud flats and marshy areas that are subject to shallow inundation in fall. Wild plants best adapted to this purpose are smartweeds, wild millet, and chufa. Seeds of smartweeds and wild millet and tubers of chufa should be sown in spring after flood waters have receded sufficiently. It may be desirable and practicable in some localities to establish dikes, canals, or other physical structures to regulate the water flow and to insure proper submergence of vegetation in fall.

The following plants are best adapted for the situations indicated:

a. For marshy flats and moist margins:

Wild millet (Echinochloa crusgalli).

Smartweeds (Polygonum).

Large-seed smartweed (P. pennsylvanicum).

Dotted smartweed (P. punctatum).

Ladysthumb (P. persicaria).

Nodding smartweed (P. lapathifolium).

Swamp smartweed (P. hydropiperoides).

Marsh smartweed (P. muhlenbergii)--suited to growth in shallow water but tolerates changing water levels.

Chufa (Cyperus esculentus).

b. For permanent ponds and lakes:

Coontail (Ceratophyllum demersum)--likely to choke out other submerged plants.

Longleaf pondweed (Potamogeton americanus).

Duckweeds (Lemna minor and Spirodela polyrrhiza)--suited to small ponds sheltered from wind and water movement.

Southern naiad (Najas guadalupensis).

In addition to the species above listed the seeds and spikelets of tealgrass (Eragrostis hypnoides) and the red-rooted cyperus (Cyperus erythrorhizos) are known to be eaten in large quantities by pintails, teals, gadwalls, and ring-necked ducks in the White River flood lands of eastern Arkansas.

Coastal Marshes and Marshland Ponds

The opportunity for increasing natural food resources in coastal marshes and marshland ponds is usually rather limited unless the water supply can be improved by physical changes. In certain places much benefit follows the construction of dams, dikes, or levees to retain fresh water or to exclude excessively salty water. Ponds are needed in many places to compensate for those ruined by drainage in coastal mosquito-control operations. Where drainage can be arrested, new ponds suitable for the production of aquatic vegetation can be created by dike impoundments or by digging or dynamiting shallow excavations in marshland.

Fresh-water coastal ponds often support a considerable variety of aquatic plants, whereas definitely brackish waters have only a few species (often only one or two), exclusive of algae. It happens, however, that the few brackish-water species are generally valuable, often abundant, and usually are present wherever habitat conditions are favorable.

Only fresh or mildly brackish marshland is, in general, productive of good food resources; the more distinctly brackish type of marsh may have satisfactory vegetative growths in its ponds, but its emergent plants--cordgrasses (Spartina spp.), salt grass (Distichlis spicata), needlerush (Juncus roemerianus), and others--have little food value.

The following plants are best adapted for such situations:

a. For brackish ponds:

Wigeongrass (Ruppia maritima).

Sago pondweed (Potamogeton pectinatus)--largely in the North.

Dwarf spikerush (Eleocharis parvula).

Horned pondweed (Zannichellia palustris).

b. For fresh or nearly fresh ponds and sluggish streams:

Sago pondweed (Potamogeton pectinatus)--largely in the North.

Southern naiad (Najas guadalupensis).

Pondweed (P. pusillus).

Muskgrasses (Characeae).

Pondweed (P. foliosus).

Claspingleaf pondweed, or redhead-grass (P. bunleuroides).

Wildcelery (Vallisneria spiralis)--in water with sluggish currents.

Banana waterlily (Castalia flava)--in the South--likely to choke out submerged plants.

c. For mildly brackish marshes:

Saltmarsh bulrush (Scirpus robustus).
Common three-square (S. americanus).
Tidemarch waterhemp (Achida cannabina)--along tidal channels from
New England to the Potomac River.
Dotted smartweed (Polygonum punctatum).
Gulf-coast spikerush (Eleocharis cellulosa)--in the South.

d. For fresh or nearly fresh marshes:

Wild millet (Echinochloa crusgalli).
Common three-square (Scirpus americanus).
Smartweeds (Polygonum).
 Dotted smartweed (P. punctatum).
 Largeseed smartweed (P. pensylvanicum).
 Nodding smartweed (P. lapathifolium).
 Waterpepper (P. hydropiper).
Wildrice (Zizania aquatica)--principal value in the North and in
parts of coastal South Carolina--requires soft, deep soil.
Squarestem spikerush (Eleocharis quadrangulata)--mainly in the
South.
Jointed spikerush (E. equisetoides)--in the Gulf region.

Miscellaneous Areas

Coastal bays are important waterfowl habitats. Prevention or elimination of harmful pollution is within man's power, but storms, tides, shifting bottoms, plant diseases (as in eelgrass), and other factors that govern the presence or abundance of duck foods in these waters are beyond practical control.

Other areas vary in size from small ponds, lakes, and large reservoirs to inland seas, and they may be acid, neutral, or alkaline. Since most plants are suited to a particular group of environmental conditions, it would be futile in certain habitats to attempt a blanket recommendation of plants suitable for so great a complex of situations.

Instead it is suggested that any person interested in availing himself of the Biological Survey's recommendations on a specific waterfowl area request a copy of the printed questionnaire provided for this purpose and fill it out as completely as possible, giving particular care to the matter of reporting existing plants or submitting suitable specimens of them. The importance of submitting specimens can hardly be over-emphasized, since plants resident in one locality serve as indicators of other species suitable for trial, and also since it is desirable to avoid unnecessary trouble and expense in the introduction of a species that is already abundantly represented.

Supplementary Information

A list of dealers in duck foods can be obtained from the Biological Survey upon request.

Additional information on duck food matters, including recommendations for propagation, will soon be published in two illustrated bulletins, now in press. These are Technical Bulletin 634, "Food of Game Ducks in the United States and Canada," which will treat of the various duck foods and the conditions under which they may be expected to survive; and Technical Bulletin 643, "Food Habits of the North American Diving Ducks," which will deal individually with the food of certain game species.

Until these publications become available, persons desiring to obtain copies may so notify the Biological Survey by postal card. The Bureau will later advise all applicants as to the price and how to order copies from the Superintendent of Documents, Government Printing Office, Washington, D. C.

